

Queuing System with Mechanism to Limit Blocking of High-Priority Packets

Abstract

A method, computer program product, and queuing system for queuing prioritized items (such as network packets), which limits the degree to which higher-priority queue items are blocked by lower priority queue items, is disclosed. A preferred embodiment of the present invention uses a simple first-in-first-out (FIFO) queue as an input queue, along with an output queue corresponding to each packet priority. A strategy is applied at the output queues to guarantee that blocking of high-priority queue items in the input queue will be limited in duration. One disclosed strategy is to enforce a constraint that whenever an output queue of any priority becomes full, the output port will stop accepting packets of any priority until all queues have space for at least one packet of each priority. Another strategy is for the output port to stop accepting packets having priorities greater than or equal to the priority of the full queue.